NATIONAL AGRICULTURAL RESEARCH ORGANISATION (NARO)

FISHERIES RESOURCES RESEARCH INSTITUTE (FIRRI)

ANNUAL REPORT 2000/2001

Background

About 20% of Uganda's surface is aquatic from which 250,000m tons of fish is produced. In addition to fish export which earned the country US$40m in 1996, and about US$100m in 2001. Fish provides 50% of protein diet for the 20m people translating into per capita consumption of 12 kg. Close to the production system, this figure rises to 50 – 100 kg! It is estimated that fishery-related activities employ at least one million people country wide (i.e. 5% of the population).

Most fish in Uganda comes from the Victoria, Kyoga, Edward, George production systems as well as from the 160 minor lakes and rivers and the associated wetland systems. Fish production of most lakes in Uganda has changed considerably since development of most of the fisheries started during the first half of the 20th century. Analysis of the changes that have taken place in these fisheries provides useful information on the potential and management issues associated with fisheries in Uganda. Capture fisheries (natural production system) contributes 99%of production even though aquaculture has as yet unrealized potential.

Mandate

Fisheries Resources Research Institute has the mandate ''to promote, undertake and co-ordinate research in fisheries, fish production systems and the water environment, aquaculture and socio-economics while conserving the natural resource base.

Mandate areas include: capture fisheries; fishing technology; fish production processes; aquatic environmental health; aquaculture; post harvest processes; and socio-economics of the fishing industry.

Goal

The goal of FIRRI is to generate and transfer improved technologies and policy recommendations aimed at ensuring sustainable fish production and a healthy environment in which fish is produced.

One of the avenues through which the Government objective of poverty eradication in Uganda can be achieved is fisheries development and management.

Introduction

It is now clear that fisheries resources are among the key assets contributing to the national development objective of poverty eradication through providing food, employment, income and export earnings. It was recently reported in the papers

that monthly fish exports had increased by 23% and fetched about US$ 10 Million during the month of November 2001 alone. This value may be underestimated as it is based solely on recorded exports from fish processing factories numbering 12.

Although fisheries resources are renewable they can be depleted through unsustainable exploitation. It is therefore important to ensure that there is guided development and management of this asset so that it can continue contributing to the livelihood of the people who depend on it. Therefore, FIRRI contributes to the fisheries sub-sector developmental objective of ensuring increased and sustainable fishery production and utilization by providing information to guide sustainable management of capture fisheries resources and development of aquaculture.

During the past two years, FIRRI has through stakeholder consultations articulated major threats to sustainability of capture fisheries, declining fish catches and fish species diversity; over-fishing; use of destructive fishing gears and methods; inadequate information on fish stocks and fish species diversity; declining diversity and low productivity of algae and invertebrate food of fishes; pollution and degradation of the fish habitats; infestation by water hyacinth and other aquatic weeds; inadequate investment skills among fishers; limited commitment and involvement of fisher communities in management of fisheries and the aquatic environment; inadequate dissemination and limited application of research results.

The main constraints to increased aquaculture production include: inadequate high quality fish fry; lack of appropriate feeds; poor pond management practices; limited variety of cultured fish species; fish stunting; inadequate information on economic viability of aquaculture; inadequate dissemination of information; and limited application of available technologies.

The period under review has been utilized to elaborate functions that address FIRRI's mandate.

The functions of FIRRI

Over the past year the functions of FIRRI, in providing information and technologies to overcome the above constraints have been elaborated as: generating, packaging and disseminating scientific information, building capacity and managing research to guide:

1. Sustainable exploitation and management of fish stocks;
2. Conservation of aquatic biodiversity;
3. Understanding productivity of algae and invertebrate food of fishes;
4. Prevention of pollution and eutrophication (over-fertilization) of the aquatic environment;

5. Control of invasive weeds especially water hyacinth;
6. Enhancement of aquaculture production;
7. Reduction of post-harvest fish losses and ensuring fish quality and safety;
8. Development of options for (a) optimization of socio-economic benefits from fisheries and, (b) for co-management; and
9. Development of policies, laws and regulations for management of fisheries and the aquatic environment

These functions have already been widely disseminated in poster form.

Implementation of the functions

The above functions are being implemented according to the NARO Strategy and Medium Term Plan (MTP) for the period 2001-2005, in line with the Plan for Modernization of Agriculture (PMA). The principles of the National Agricultural Advisory Services (NAADS) are also being considered. Under PMA, research and technology development has been foreseen as the first among the seven pillars of PMA. In addition to this pillar, FIRRI contributes to the sixth pillar of PMA, sustainable natural resources management by generating and disseminating information to guide sustainable development and management of fisheries resources and the fish habitat.

In order to fulfill its objective, FIRRI is implementing two projects under the NARO MTP. The first project focuses on capture fisheries and targets: "***Management Of Fish Stocks, Biodiversity And Environment Of Aquatic Systems***". This project is divided into sub-projects focusing on capture fisheries production systems namely: Victoria basin lakes; Kyoga basin lakes and rivers; Lake Albert and Albert Nile; Lakes Edward and George; and small water bodies. This systems approach is foreseen as a step towards decentralization of capture fisheries research to major fish production systems. Four disciplines have been identified as being crucial to the implementation of the capture fisheries project. These include: fish stock assessment; fish Biology and ecology; Physico-chemical conditions and algal productivity; invertebrate studies; fisheries socio-economics and post have fisheries. These represent the expertise required in implementing the project in the different systems.

The second project focuses on aquaculture and targets: "***Enhancement Of Fish Farming Through Improved Fry Production And Feeding***". The emphasis under aquaculture is in those areas such as the north and the northwest, which have high demand for fish but are far from the main lakes and rivers. Research in aquaculture focuses on improving fry production; and feeding pond management. These areas represent the expertise required in aquaculture. Aquaculture research concentrates on promoting culture of the two currently important aquaculture species, the Nile tilapia (*Oreochromis niloticus*) and the catfish (*Clarias gariepinus*). Efforts are also being made to introduce the originally

popular species such as the Ningu (*Labeo victorianus*) and the native Lake Victoria Ngege (*Oreochromis esculentus*).

A functional organogram developed to depict operational linkages within the projects is attached. The key output of fisheries research is information in the form of books, booklets, fact sheets/brochures, posters and other information dissemination materials to be used by service providers and resource users to manage capture fisheries resources sustainably and for enhancing aquaculture production.

The process of generating this information has involved identifying stakeholder needs, generating the required information, packaging and discussing the information with stakeholders, and passing the synthesized information to service providers and resource users. In addition, scientific information is also presented to the international community through publications and workshops.

Staffing

During 2000/2001, FIRRI had 88 NARO appointed staff (Annex 1) including 21 research scientists, 15 technicians and other support staff at various levels (boat crew, administration/accounts, library and junior staff). Staff changes are detailed in Annex 1.

Collaboration and linkages

FIRRI collaborated with other NARO institutes and was especially involved with FOSRI (previously post-harvest programme under FIRRI). Other collaborators included the Uganda Fisheries Resources Department, several departments at Makerere University, the Directorate of Water Development (DWD), National Water and Sewerage Corporation (NWSC), the National Wetlands Programme (NWP) and NGOs.

International and regional collaborators included research institutes around Lake Victoria i.e. the Kenya Marine Fisheries Research Institute (KEMFRI) in Kenya, and the Tanzania Fisheries Research Institute (TAFIRI). Collaboration on the International scene included the Universities of Waterloo, Florida, Wagenigen; Boston and Leiden on various themes under FIRRI's functions.

Funding

The Uganda government and its development partners notably IDRC, EU and LVEMP continued to fund some of FIRRI activities especially on lake Victoria. There were also short-term studies undertaken through studentships in addition to contractual services rendered to clients such as the AES Nile Power EIA surveys on the Victoria Nile. There has, however been irregular flow of the funds from the common NARO pool. For instance, during the last financial year no

funds were allocated to FIRRI from the funds released to MEPU from the Ministry of Finance.

Highlights of Achievements for 2000/2001

The highlights of achievements for 2000/2001 are outlined below in respect to the different functions and projects under FIRRI.

Technology generation

Function one: Sustainable exploitation and management of fish stocks

a. Fish stock assessment was carried out on Lake Victoria and information is now available on the types, size structure, distribution, density and magnitude of fish stocks.
b. Fishing effort and catch assessment surveys were made on Lakes Victoria and George and recommendations have been compiled on management of fishing effort.
c. Appropriate fishing gears and methods for harvesting commercially important fishes on most of Ugandan lakes have been determined and suitable types and sizes recommended.
d. Population characteristics of major commercial species such as Nile perch were monitored in relation to the future of the fishery especially in lakes Victoria and Kyoga and recommendations for management are now available.
e. The evolution, potential and management of the Mukene fishery was investigated and documented.

Function two: Conservation of aquatic biodiversity

a. Habitats (satellite lakes & refugia) where species that were depleted from lakes Victoria and Kyoga were identified and recommendations for protection of the fishes and habitats made;
b. Data were collected on *Oreochromis esculentus*, the native Ngege of lakes Victoria and Kyoga and recommendations made for conservation and improvement of its stocks.
c. The genetic status, especially of key introduced and endangered species (Native tilapiines and Ningu) was determined in relation to conservation of species and genetic diversity especially in lakes Victoria and Kyoga.
d. The impacts of introduced fish species especially Nile perch and Nile tilapia on fish species diversity was monitored in lakes Victoria and Kyoga.

e. A detailed survey and documentation on the River Nile was carried out to address the issues of dam construction along the river.
f. Changes in macrophytes, algae and invertebrate communities were investigated and documented

Function three: Integrating Lake Productivity processes into fisheries management

a. Information on nutrient concentration and on major physical variables (oxygen, light, temperature) of major water bodies was collected and documented;
b. Changes in algal composition, biomass and productivity and their implications on water quality and fish production in Lake Victoria and other Ugandan lakes were determined;
c. The composition and abundance of invertebrate communities and their influence on fish production in major and minor water bodies was investigated.

Function four: Prevention of pollution and eutrophication of the aquatic environment

a. Information was generated on eutrophication and pollution of Lakes Victoria and Albert and their implications on water quality and fish production were assessed and management recommendations made.
b. Sources and concentrations of contaminants and their potential impact on aquatic resources were investigated in lakes Victoria and Albert.
c. The efficiency of wetland plants (especially *Phragmites* and papyrus) in removal of nutrients to improve water quality was documented from previous studies.
d. The changes in the environment and fishery of Lake Wamala were monitored and management recommendations made;
e. Fishery and water quality characteristics of several small water bodies including Lake Nabisojjo, and Kabaka's lake were made and appropriate recommendations for their management proposed;
f. Restocking trials were carried out on two minor lakes in Kisoro district;

Function five: Control of invasive weeds especially water hyacinth

a. Information was collected and documented on the distribution, impacts and control of water hyacinth.

b. The first major wave of resurgence of water hyacinth in November 2000 was investigated and documented. Resurgence potential of the weed is being monitored and potential hot spots are being identified and mapped.
c. Two native waterweeds *Naja horrida* and *Hydrilla verticillata* were identified in Lakes Bisina and Opeta and their magnitude and impacts are being investigated.

Function six: Enhancement of Aquaculture Production

a. On-station and on-farm trials were carried out on performance of tilapia using different local food ingredients. Significant improvement in growth of tilapia was achieved through fertilization using sunflower seed cake. This is being promoted on-farm especially in Northern Uganda where there is extensive shortage of fish.
b. Some success was made in breeding Ningu *(Labeo victorianus)* in captivity and on-station and growth trials are being conducted;
c. Production of *Clarias* (Male) fingerlings was started at Kajansi.

Function seven: Post harvest fisheries

Very little progress can be reported regarding reduction of post-harvest fish losses and ensuring fish quality and safety. During ARTPI, there was a Post Harvest Fisheries Research Program under FIRRI. This program eventually evolved into the Food Science and Technology Research Institute (FOSRI) with specific mandate to food quality and hygiene, food preservation, processing, processing, marketing and nutrition across all commodities. There has of late been very little attention on post-harvest fisheries and during preparation of MTP, post harvest fisheries had been completely left out of the NARO research projects. Given the importance of post harvest fisheries issues in the fisheries sector, it is important that there is a unit at FIRRI to carry out research on post harvest fisheries. The following areas need to be examined under the post harvest fisheries:

a. Quantification of post harvest fish losses;
b. Identification and monitoring causes and sources of post harvest fish losses; Determining shelf life of fish and fish products; and
c. Develop options for direct utilization of Mukene for food

Function eight: Fisheries socio-economics and co-management

This discipline services all functional areas and production systems during the reporting period:

a. Information was collected and documented on collaborative management as an option for fisheries management with respect to Lake victoria;
b. Socio-economic implications of fish exports in Uganda have been investigated and documented;
c. Provisional data has been collected and documented on the nutritional status of fishing communities around Lake Victoria;
d. The implications of socio-cultural practices on fish quality has been investigated and documented

Technology dissemination

A number of workshops have been conducted in the recent past in an effort to avail information to service providers and resources users: Technical review workshops have been conducted on:

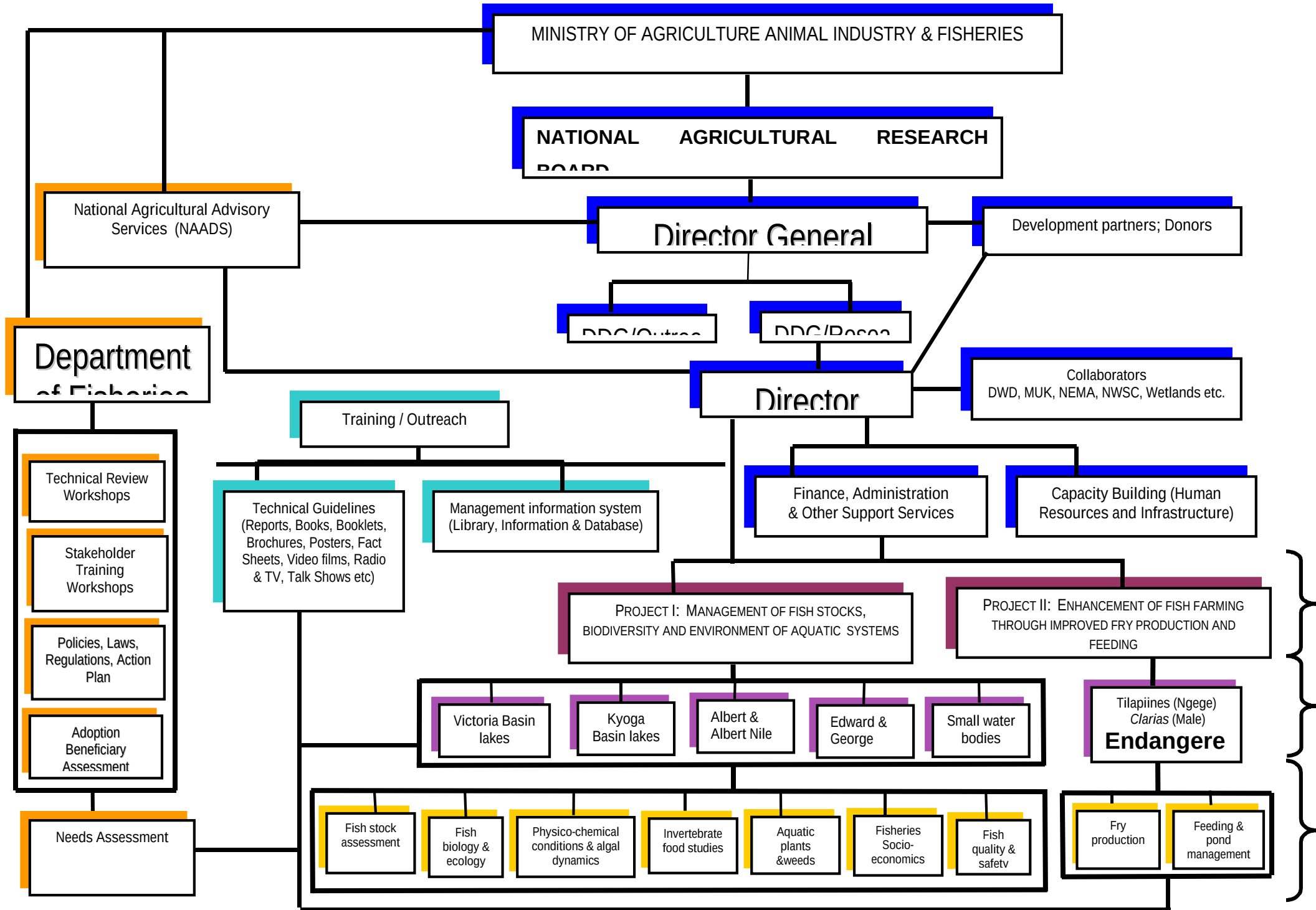
a. Management of the fisheries, biodiversity and environment of Kyoga basin lakes;
b. Conditions for development of Lake Nabisojjo Luwero District;
c. Rehabilitation of Kabaka's lake;
d. Management of the fisheries biodiversity and environment of Victoria basin lakes;
e. A training workshop was conducted for Fisheries Officers from districts to sub-counties around Kyoga basin lakes and similar training is to be conducted for other lakes.
f. FIRRI has been visited extensively by groups of students and teachers from primary, secondary and tertiary educational institutions and by groups of stakeholders for lectures and tours.
g. One national workshop was conducted to review status of aquaculture in Uganda

Technology packaging – Publications

The above efforts have resulted in production of a number of technical documents copies of which are available. These include:

a. A brochure on the mandate of FIRRI;
b. A poster on advice on fishing gears and methods;
c. A poster on functions of FIRRI;
d. A report on the potential impact of dam construction on the Upper Victoria;
e. A Report of the status of aquaculture in Uganda;
f. Newspaper supplements and articles;
g. A number of mass media events;
h. Proceedings of workshops on lakes Victoria, Kyoga, Nabisojjo, Kabaka's lake

The various materials have been widely distributed among stakeholders and are being deposited on a FIRRI website on the Internet for a wider audience. Apart from workshops on the various basin lakes, FIRRI at present receives an average of 500 visitors per month mostly students from schools and fisher folk groups.


MINISTRY OF AGRICULTURE ANIMAL INDUSTRY & FISHERIES
NATIONAL AGRICULTURAL RESEARCH
National Agricultural Advisory Services (NAADS)
Director General
Development partners; Donors
Department
Director
Collaborators
DWD, MUK, NEMA, NWSC, Wetlands etc.
Training / Outreach
Technical Review Workshops
Stakeholder Training Workshops
Policies, Laws, Regulations, Action Plan
Adoption Beneficiary Assessment
Technical Guidelines (Reports, Books, Booklets, Brochures, Posters, Fact Sheets, Video films, Radio & TV, Talk Shows etc)
Management information system (Library, Information & Database)
Finance, Administration & Other Support Services
Capacity Building (Human Resources and Infrastructure)
PROJECT I: MANAGEMENT OF FISH STOCKS, BIODIVERSITY AND ENVIRONMENT OF AQUATIC SYSTEMS
PROJECT II: ENHANCEMENT OF FISH FARMING THROUGH IMPROVED FRY PRODUCTION AND FEEDING
Victoria Basin lakes
Kyoga Basin lakes
Albert & Albert Nile
Edward & George
Small water bodies
Tilapiines (Ngege) Clarias (Male)
Endangere
Needs Assessment
Fish stock assessment
Fish biology & ecology
Physico-chemical conditions & algal dynamics
Invertebrate food studies
Aquatic plants &weeds
Fisheries Socio-economics
Fish quality & safetv
Fry production
Feeding & pond management

List of Papers presented at the Kyoga Basin Lakes Workshop (12-16 June, 2001)

Timothy Twongo, 2001. NARO - FIRRI Mid Term Plan in relation to the issues in the management of fish stocks, biodiversity and environment of Kyoga basin lakes.

John S. Balirwa, 2001. Information Needs for Management of the Kyoga Basin Lakes.

John S. Balirwa, 2001. Basic Principles of Fisheries Management.

Sylvester Wandera Bwaku, 2001. Classification and Identification of fishes.

Ali Mohammed, 2001. Introduction to Fishbase.

Mbabazi D and G. Namulemo, 2001. Application of fish Biology in Management of the Fisheries.

Levi Muhoozi, 2001.Fish Stock Assessment.

Dismas Mbabazi., Ndawula L. & Namulemo, 2001.Conservation of Aquatic Biodiversity.

Ali Muhamed, 2001. Introduction to Biodiversity.

Lucas Ndawula., T. Twongo & G. Magezi, 2001. The role of Lake Productivity Processes in Fishery Production.

John S. Balirwa and T. Twongo, 2001. Importance of Protecting Fish Habitats.

Timothy Twongo, 2001. Aquatic weeds, their impacts on fisheries and environment, and their control.

Patrick Bwire, 2001. Role of computing

Paul Namisi, 2001. The Role of Socio-economics in the Sustainable Development and Management of the Fisheries.

Jonna R. Kamanyi, 2001. Fishing effort and impact of fishing gears and fishing methods on fishes and fisheries of Kyoga basin lakes.

Paul Namisi, 2001. Options for Poverty Reduction through Community Empowerment towards Sustainable Fisheries Resource Production and Equity.

Jona Kamanyi and P. Namisi, 2001. Current Policies, Laws and Regulations in Relation to Management of Kyoga Basin Lakes.
Jona Kamanyi, 2001. The status of the fish stocks.

List of Papers presented at the Kabaka's Lake Workshop (13th July 2001)

Jonna Kamanyi and Dismas Mbabazi, 2001. The fish stocks of Kabaka's Lake.

Godfrey Magezi and Janat Naluwayiro, 2001. The status of the environment (nutrients and phytoplankton).

John S. Balirwa, 2001. Aquatic macrophytes and their role especially in buffering the lake from external inputs.

Lucas Ndawula., 2001. The invertebrate communities and their ecological role.

Paul Namisi, 2001. The Socio-Economics Status of Kabaka's Lake.

John S. Balirwa, 2001. The present status of bilharzia (=Schistosomiasis) in the Kabaka's Lake, Mengo.

Annex 1 Staff List

Sn.	Name	Designation	Qualification
1.	Dr. R.Ogutu-Ohwayo	Director	B.Sc., M.Sc., PhD.
2.	Dr. T. K. Twongo	Principal Research Officer	B.Sc., M.Sc., PhD.
3.	Dr. J. S. Balirwa	Senior Research Officer	B.Sc., M.Sc., PhD.
4.	Mr. K. O. Odongkara	Senior Research Officer	B.Sc., M.Sc.
5.	Mr. J. Kamanyi	Senior Research Officer	B.Sc., M.Sc.
6.	Dr. L. M. Ndawula	Research Officer	B.Sc., M.Sc., PhD.
7.	Mr. J. O. Okaronon	Research Officer	B.Sc., M.Sc.
8.	Dr. R. Mugidde	Research Officer	B.Sc., M.Sc., PhD.
9.	Mr. S. B. Wandera	Research Officer	B.Sc., M.Sc.
10.	Mr. S. Sekiranda	Research Officer	B.Sc., M.Sc.
11.	Mr. F. M. Wanda	Research Officer	B.Sc., M.Sc.
12.	Mr. L. Muhoozi	Research Officer	B.Sc., M.Sc.
13.	Ms. G. Namulemo	Research Officer	B.Sc., M.Sc.
14.	Ms. J. Akumu	Research Officer	B.Sc., M.Sc.
15.	Mr. D. Mbabazi	Research Officer	B.Sc. (Educ) M.Sc.
16.	Mr. J. Wasukira	Marine Engineer	MSc. Eng
17.	Mr. L. Kibirige	Master Fisherman	Dip. Master Fisherman, Dip. Gear Technology
18.	Mr. M. K. Magumba	Chief Laboratory Technician	SLT/ALT EAACE
19.	Mrs. E. A. Twongo	Senior Laboratory Technician	Cert (Env. Technology) SLTI, SLTII, EAACE, Graduate Dip. City Guilds.
20.	Mr. R. Amina	Senior Laboratory Technician	SLTI, SLTII, UACE
21.	Mr. V. Kiggundu	Laboratory Technician	Dip. (SLT) Biology, UACE
22.	Mr. H. Ocaya	Laboratory Technician	Cert. (S&T.I) UACE
23.	Mr. H. Ochieng	Laboratory Technician	Dip. (SLTI) Biology, UACE
24.	Mr. S. Bassa	Laboratory Technician	Cert. (SLT I) UACE
25.	Mr. Opolot Oula	Laboratory Technician	Dip. Fishing Mg. Methods and gear technology
26.	Ms. M. Nsenga	Laboratory Technician	Dip. (SLT) Biology, UACE
27.	Mr. Rwabwera Kakuru	Records Assistant	Advanced Dip. In Mgt. Cert. Records & information
28.	Ms. F. Bazanya	Secretary	Cert. G. P. (Steno), Cert. (Soc. Studies),

			UACE
29.	Ms. J. Nakimbugwe	Typist Cum Clerk	Cert. (Typing 50 WPM)
30.	Ms. R. Ikanza	Typist Cum Clerk	Cert. (Typing 50 WPM)
31.	Mrs. J. Namara Twinomujuni	Typist Cum Clerk	Cert. Secretarial, Cert. Computer Oper.
32.	Ms. S.Ngangea	Telephone Operator	Cert. Tel. Operations O'level
33.	Mr. I. Nsanze	Ag. Finance Officer	HDM. B. Com
34.	Mr. S. Okwakol	Accounts Assistant	O'level
35.	Mr. G. Muhindo	Accounts Assistant	UDBS
36.	Ms. S. Agabirwe	Cashier	UDBS
37.	Mr. Ochwo	Audit Assistant	HDM
38.	Ms. L. Nambalirwa	Stores Assitant	DSM
39.	Ms. F. Kakolwa	Assistant Librarian	DLIS
40.	Mr. S. N. Sowobi	Draughtsman	Cert. (Cartographic Tech)
41.	Mr. E. Ndwokya	Artisan (Mechanic)	City & Guilds in Agric
42.	Mr. J. Mugogo	Artisan (Joiner)	Certificate
43.	Mr. J. P. Amitu	Carpenter	Uganda Junior Technical Certificate
44.	Mr. J. Were	Coxswain	'O' level
45.	Mr. I. Musana	Coxswain	Inter. Cert., MV Techn, Cert. MV Techn, Part I 'O'
46.	Mr. Wanok Wanume	Deckhand Grade I	P.7
47.	Mr. S. Kikonyogo	Deckhand Grade I	Certificate AGRO. Vet/O level
48.	Mr. R. Esimu	Deckhand Grade I	S.3
49.	Mr. C. Baliise	Deckhand Grade I	Certificate Business studies, O level
50.	Mr. J. Bwire	Deckhand Grade I	J.2
51.	Mr. A. Bagaga	Deckhand Grade II	P.7
52.	Mr. S. Wesige	Deckhand Grade II	P.7
53.	Mr. B. Ssonko	Deckhand Grade II	S.2
54.	Mr. S. Mukose	Deckhand Grade II	S.2
55.	Mr. D. Balidawa	Driver	P.7
56.	Mr. A. Katende	Driver	P.7
57.	Mr. M. Bifamengo	Driver	P.7
58.	Mr. A. Wandiba	Security Guard	P.7
59.	Mr. T. Baliraine	Security Guard	P.5
60.	Mr. A. Mwima	Security Guard	P.4
61.	Mr. J. Kintu	Office messenger/cleaner	P.7
62.	Mr. B. Asonya	Office messenger/cleaner	P.7
63.	Ms. R. Kabalinzi	Office messenger/cleaner	P.4
64.	Mr. D. Kiwanuka	Office messenger/cleaner	'A' level, Cert. Computer

65.	Ms. C. Tumwine	Librarian	B.Sc. P.G.D. Lib. Science

FIRRI STAFF AT KAJJANSI

66.	Dr. G.Mbahinzireki	Officer – In - Charge	B.Sc, M.Sc., PhD
67.	Mr. Owori Wadunde	Research Officer 1	B.Sc, M.Sc.
68.	Dr. N.A. Isiagi	Research Officer 1	B.Vet. Med., M.Sc.
69.	Mr. Olet Ogwang	Research Assistant	B.Sc.
70.	Mr. A.F Masaba	Lab. Technician	Diploma
71.	Mr. G. Kityo	Lab. Technician	Diploma
72.	Mr. D.I. Ocen-Egau	Lab. Technician	Diploma
73.	Mr. G. Busulwa	Accounts Assistant	B.Com
74.	Ms. H.E. Nababi	Typist Cum Clerk	Cert. Typing
75.	Ms. Bidawo .	Typist Cum Clerk	Cert. Typing
76.	Mr. J. Bugagga	Driver	J.2
77.	Mr. P. Semogerere	Security Guard	P7
78.	Mr. E. Rwambuga	Security Guard	P.7

Terminations

1.	Mr. J. Ojeke	Security Guard	S.1

Transfers

1.	Mr. Okoth Ochwo	Audit Assistant	HDM

Deceased

1.	Mr. J. P. Olowo	Research Officer	B.Sc. M.Sc.
2.	Mr. F. Mugume	Senior Laboratory Technician	SLT I, SLT II, UACE

NON-NARO STAFF AT FIRRI-UGANDA

Sn.	Name	Designation	Qualification
1.	P. Namisi	Research Officer	B.Sc. MSc.
2.	I. Mukobe	Training/Outreach Officer	BACE
3.	I. Lubega	Statistician	B. Stat
4.	H. Oguttu	Research Assistant	B.Sc, M.Sc.
5.	V. Kulyanyingi	Research Assistant	B.Sc. Agric
6.	J. Wegoye	Research Assistant	B.Sc. Agric
7.	I. Kyangwa	Research Assistant	BA. (ss)
8.	J. Nagayi	Research Assistant	B.Sc, M.Sc.
9.	M. Kabi	Research Assistant	B.Sc.
10.	M. Kyangwa	Research Assistant	B.A
11.	A. Nyapendi	Research Assistant	Dip.
12.	J. Gonga	Research Assistant	Cert.
13.	A. Nasuna	Research Assistant	Dip.
14.	A. Atai	Research Assistant	Dip.
15.	A. Taabu	Research Assistant	BSc.
16.	D. Ocenodongo	Research Associate	BSc. Msc.
17.	J. Naluwairo	Lab Technician	Dip.
18.	G. Magezi	Lab Technician	Cert.
19.	J. Luyiga	Lab Technician	Dip.
20.	P. Bwire	Lab Assistant	Dip.
21.	W. Pabire Gandhi	Lab Technician	Dip.
22.	E. Ganda	Lab Technician	Dip.
23.	W. Okello	Lab Technician	Dip.
24.	E. Muhumuza	Lab Technician	Dip.
25.	D. Namuyonga	Lab Assistant	Cert.
26.	G. Nalubega	Aquarium Attendant	Cert.
27.	O. Tibeijjuka	Typist Cum Clerk	
28.	L. Nandudu	House Keeper (Guest House)	
29.	E. Ssemakula	House Keeper (Guest House)	
30.	C. Isabirye	Artisan	Cert.
31.	Y. Muyita	Mason	
32.	S. Mukasa	Driver	
33.	H. Mwogeza	Driver	
34.	S. Muweta	Driver	
35.	G. Obbo	Driver	
36.	R. Jawoko	Driver	
37.	R. Kateu	Driver	
38.	A. Omunyide	Driver	
39.	P. Muledhu	Security Guard	
40.	S. Elwaru	Security Guard	

41.	G. Matuga	Security Guard	
42.	A. Musanya	Sanitory Cleaner	
43.	M. Ogutti	Shamba boy (Guest house)	
44.	W. Edaku	Shamba boy (Guest house)	
45.	S. Bigirwa	Driver	
46.	P. Mwandu	Assit. Captain	Cert. Navigation
47.	M. Otim	Mower operator	
48.	I. Lusibo	Gardener	
49.	R. Bazibu	Gardener	
50.	A. Ajambo	House keeper (Director's office/hostel	

NON-NARO STAFF AT KAJJANSI

51.	B. Ohwo	Stores Assistant	
52.	A. Mparmpa	Lab. Technician	
53.	F. Kizza	Office Messenger	
54.	Ssonko	Driver	
55.	Ddumba	Driver	

Resignations

1.	R. Kubaiza	Research Associate	B.U.S
2.	H. Gonza	Library Attendant	S.6
3.	P. Ongaria	Library Attendant	Cert.